## This Page Is Inserted by IFW Operations and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

## IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents will not correct images, please do not report the images to the Image Problem Mailbox.

What is claimed is:

10

15

20

 A method of detecting sequential data transfer requests, comprising:

determining whether a first data transfer request crosses a boundary address, and, if it does:

determining if the first data transfer request may be indicated as combinable with subsequent data transfer requests.

2. The method of claim 1, further comprising:

determining whether a previous data transfer request has been indicated as combinable, and if it has been indicated as combinable:

determining that a new data transfer request is addressed adjacent to the previous data transfer request.

3. The method of claim 2, wherein determining the new data transfer request is addressed adjacent comprises:

determining that the new data transfer request is addressed within a specified minimum number of blocks as the previous data request.

4. The method of claim 2, wherein a specified minimum number of boundary address crossings are determined before indicating data transfer requests may be combinable.

5

5. The method of claim 2, further comprising: defining a boundary block length; and

determining the first data transfer request crosses an address equal to a multiple of the boundary block length before indicating the first data transfer request may be combinable.

6. The method of claim 5, further comprising:

setting a first tracking address equal to a multiple of the boundary length;

determining a second data transfer request crosses the first tracking address; and

indicating the second data transfer request may be combinable with subsequent data transfer requests.

20

15

7. The method of claim 5, wherein the boundary block length comprises a number that is a power of two, wherein

determining whether the first data transfer request crosses a boundary address comprises:

determining whether a most significant bit of the boundary length is equal to a most significant bit of the first data transfer request address.

8. The method of claim 6, further comprising:

tracking at least two separate sequential streams for sequential handling.

10

5

9. The method of claim 8, wherein tracking further comprises:

storing a tracking address and a corresponding tracking address counter value for each tracked sequential stream.

15

10. The method of claim 9, further comprising:

incrementing one of the tracking address counters for each data transfer request determined adjacent to a previous data transfer request; and

20

indicating that one of the tracked sequential streams may be released as a combined I/O transfer when a corresponding one of the tracking address counters is greater than a specified maximum value.

5

10

15

20

11. The method of claim 10, further comprising:

decrementing one of the tracking address counters for
each data transfer request determined not adjacent to a
previous data transfer request.

12. An article comprising a machine-readable medium that stores machine-executable instructions for detecting sequential data transfer requests, the instructions causing a machine to:

determine whether a first data transfer request crosses a boundary address, and, if it does:

determine if the first data transfer request may be indicated as combinable with subsequent data transfer requests.

13. The article of claim 12, further comprising instructions causing a machine to:

determine whether a previous data transfer request has been indicated as combinable, and if it has been indicated as combinable:

determine that a new data transfer request is addressed adjacent to the previous data transfer request.

10

20

- 14. The article of claim 13, wherein determining the new data transfer request is addressed adjacent comprises determining that the new data transfer request is addressed within a specified minimum number of blocks as the previous data request.
- 15. The article of claim 13, wherein a specified minimum number of boundary address crossings are determined before indicating data transfer requests may be combinable.
- 16. The article of claim 13, further comprising instructions causing a machine to:

define a boundary block length; and

- determine the first data transfer request crosses an address equal to a multiple of the boundary block length before indicating the first data transfer request may be combinable.
  - 17. The article of claim 16, further comprising instructions causing a machine to:

set a first tracking address equal to the boundary block length;

determine a second data transfer request crosses the first tracking address; and

indicate the second data transfer request may be combinable with subsequent data transfer requests.

5

10

15

20

- 18. The article of claim 16, wherein the boundary length comprises a number that is a power of two, wherein determining whether the first data transfer request crosses a boundary address comprises determining whether a most significant bit of the boundary block length is equal to a most significant bit of the first data transfer request address.
- 19. The article of claim 16, wherein at least two separate sequential streams are tracked for sequential handling, wherein the article further comprises instructions causing a machine to:

store a tracking address and a corresponding tracking address counter value for each tracked sequential stream.

20. The article of claim 19, further comprising instructions causing a machine to:

increment one of the tracking address counters for each data transfer request determined adjacent to a previous data transfer request; and

indicate that one of the tracked sequential streams may be released as a combined I/O transfer when a corresponding one of the tracking address counters is greater than a specified maximum value.

21. The article of claim 20, further comprising instructions causing a machine to:

decrement one of the tracking address counters for each data transfer request determined not adjacent to a previous data transfer request.

10

5